

T08D03 – (8.4) pH Scale Notes

Name

- 8.4.1 Distinguish between aqueous solutions that are acidic, neutral or alkaline using the pH scale. (2)
- 8.4.2 Identify which of two or more aqueous solutions is more acidic or alkaline using pH values. (2)
- 8.4.3 State that each change of one pH unit represents a 10-fold change in the hydrogen ion concentration $[H^+(aq)]$. (1)
- 8.4.4 Deduce changes in $[H^+(aq)]$ when the pH of a solution changes by more than one pH unit. (3)
 - Briefly describe what the logarithm scale is and why Sorenson decided to use such a scale for the concentrations of H^+ and OH^- in solution:

b. Complete the following table for values of each

	pH	pOH	pK_w (pH+pOH)	$[H^+]$		$[OH^-]$		K_w Sci. Not.
				Sci.Not	Traditional Number	Sci.Not	Traditional Number	
ACIDIC	1							
	2							
	3							
	4							
	5							
	6							
N	7							
BASIC	8							
	9							
	10							
	11							
	12							
	13							
	14							

c. In order to convert between the above values, we must know a few basic examples, show the following:

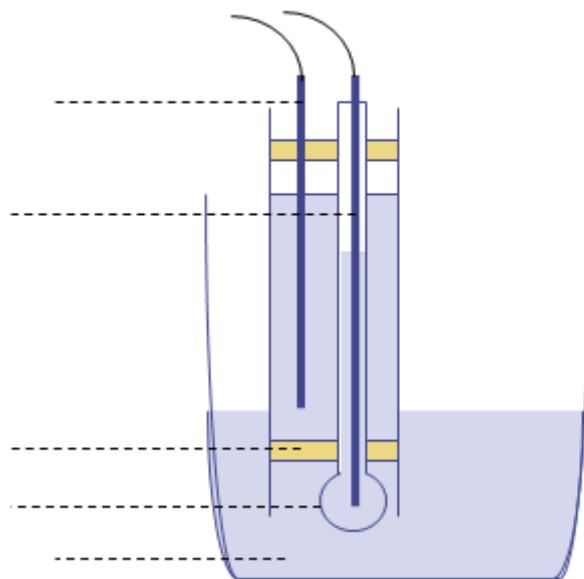
i. How to convert between pH and $[H^+]$, AND back again between $[H^+]$ and pH:ii. How to convert between pOH and $[OH^-]$, AND back again between $[OH^-]$ and pOH

iii. How to convert between pH and pOH

iv. How to convert between $[H^+]$ and $[OH^-]$

d. Explain (using values and equations from above) why water is neutral:

e. How does a pH probe and meter work? Diagram the following



Complete the following table:

$[\text{H}^+]$	$[\text{OH}^-]$	pH	pOH
.....	1.9
.....	1.5×10^{-4}
.....	-0.60
2.3×10^{-2}
.....	5.5
0.000155